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JOINT COUNCIL ON FOOD AND AGRICULTURAL SCIENCES

Secretariat:
Science and Education Administration
U.S. Department of Agriculture
Washington, D.C. 20250

PROCEEDINGS OF THE
JOINT COUNCIL ON FOOD AND AGRICULTURAL SCIENCES
MEETING, JANUARY 16-18, 1980
WASHINGTON, D.C.

Attendees:

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Anson R. Bertrand, Cochairman
John S. Robins, Cochairman
W. Henry Anthony
A. Richard Baldwin
Charles B. Browning
Robert E. Buckman
Richard A. Farley
Kenneth R. Farrell
Homer C. Folks
John L. Gerwig
Mary Nell Greenwood
D. Mark Hegsted
R. J. Hildreth
Terry B. Kinney (for
T. W. Edminster)
John P. Mahlstedt
Richard D. Morrison
Harold F. Robinson
Richard A. Skok
Charles M. Smallwood
W. I. Thomas
James Nielson, Executive Director
Fred E. Westbrook, Acting Executive
Secretary

Others Present:

Tom Adams, House Agriculture Committee
Raymond Altevogt, National Food Processors
James E. Bath, USDA/SEA
Charles Beer, USDA/SEA
Don Black, USDA/SEA
Ira Branson, USDA/SEA
John M. Brazzel, USDA/SEA
Anita Brown, House Agriculture Committee
Mark Buchanan, Western Director-at-Large,
State Agricultural Experiment Stations
C. Elmer Clark, Agricultural Experiment Station
Logan, Utah
Jane Coulter, USDA/SEA
Jim Cowan, NASULGC
W. M. Dowler, USDA/SEA
John Fulkerson, USDA/SEA
Louise Gentry, USDA/SEA
Duane Hacklander, USDA/ESCS
Maynard C. Heckel, University of New Hampshire
Keith Huston, North Central Director-at-Large
State Agricultural Experiment Stations
Allan Johnson, USDA/ESCS
Jerry Jorgenson, House Agriculture Committee
Omer J. Kelley, OTA/U.S. Congress
E. L. Kendrick, USDA/SEA/AR, Southern Region
Dick Kennell, USDA/SEA
Bob Kern, GPA (IPA from Iowa State)
Marvin E. Konyha, USDA/SEA
Charles A. Kraenzle, USDA/SEA
Ralph J. McCracken, USDA/SEA
James Meyers, USDA/UAB
Edward O. Moe, USDA/SEA
Don Nelson, USDA/SEA

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PROCUREMENT SECTION
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Others Present:

Paul O'Connell, USDA/SEA
R. Max Peterson, USDA/FS
Merrill L. Petoskey, USDA/SEA
Mike Phillips, OTA/U.S. Congress
G. H. Porter, Agricultural Research Institute
Joseph Purcell, IR-6 (Experiment Stations)
Tom Ronningen, Northeast Director-at-Large
Leland L. Scott, USDA/ESCS
Keith R. Shea, USDA/SEA
John G. Stovall, USDA/SEA
Larry Summers, USDA/SEA
Howard Tankersley, USDA/SEA
Paul Truitt, Agricultural Research Institute
George Waldman, USDA/OICD
Rosemary Wolfe, USDA/SEA
W. Fred Woods, USDA/SEA

1. Presiding Cochairmen: Anson R. Bertrand and John S. Robins
2. The Proceedings of the October 10-12, 1979, meeting were approved.
3. Membership
 - a. Persons whose terms expired after this meeting of the Joint Council:

Charles B. Browning, Dean, School of Agriculture,
Oklahoma State University

Doris Howes Calloway, Professor of Nutrition,
University of California

John P. Mahlstedt, Associate Dean, College of Agriculture,
Iowa State University

Certificates of Appreciation were given to these departing charter members of the Council and letters of commendation were sent to their superiors in recognition of services rendered on the Council.

- b. Replacements for the above-named members:

George W. Sledge, Associate Dean, College of Agricultural and
Life Sciences, University of Wisconsin

Susan M. Oace, Associate Professor, Human Nutrition,
University of California

John P. Jordan, Director, Agricultural Experiment Station,
Colorado State University

- c. Mary Nell Greenwood, Acting Deputy Director for SEA-Extension, was introduced as a new member of the Joint Council replacing Neill Schaller who accepted a position on the Secretary's staff.
 - d. The four Ad Hoc Regional Council Chairmen in the Council's planning and coordination structure were in attendance. They are:
 - (1) Dr. Gilbert H. Porter, New York
Northeastern Ad Hoc Regional Council
 - (2) Dr. Keith A. Huston, Minnesota
North Central Ad Hoc Regional Council
 - (3) Dr. C. Elmer Clark, Utah
Western Ad Hoc Regional Council
 - (4) Dr. E. L. Kendrick, Louisiana
Southern Ad Hoc Regional Council

4. Staff

The Executive Director announced that John Stovall is the new Associate Deputy Director for JPE, and David Dyer is Public Participation Analyst for JPE.

5. The 1979 Joint Council Annual Report

Cochairman Robins stated that Charles Beer and John Stovall had revised the second draft of the report, and those who wish to review this draft would be provided a copy. The Executive Committee will assume the responsibility of seeing that the document is put in final form.

6. Reports

a. Liaison report from International Science and Education Council (ISEC) by J. W. Cowan, reporting for liaison representative J. E. Legates:

- A full time staff person has been hired to serve a growing involvement of international clientele.
- A new ISEC agreement is to be signed on January 18, 1980, between ISEC and the USDA.
- Several committees (Training Committee, Technical Assistance Committee, Scientific Exchange Committee) have been formed.
- Up to ten exchange groups have been active with China.
- ISEC has facilitated the major portion of the involvement with Saudi Arabia and China.
- There is a remarkable partnership with the Department of Agriculture.
- ISEC would like to work with the Joint Council on the Five-Year Plan for Food and Agricultural Sciences.
- The Council received this report as information.

b. Report on Research Facilities Study Group

Donald Black reported that the study is in its final stages, and that the study catalogs available space. The study gives composite figures, but areas vary in the adequacy of facilities. It was suggested that the results of this study be referred to the Users Advisory Board.

c. Report on the National Extension Evaluation Study.

- This report described the Cooperative Extension System and evaluates the consequences of its educational programs. The report was requested by Congress in the Food and Agriculture Act of 1977 (Section 1459, Title XIV). The Secretary of Agriculture was asked to provide "... an evaluation of the

economic and social consequences of the programs of the Extension Service and the Cooperative Extension Services."

- This report was a joint effort of the Department of Agriculture and the State Extension Services. A policy group guided the project, a design team developed the blueprint for it, and a core staff conducted the required studies and wrote the report. An independent citizens' panel reviewed the project report.
- Mary Nell Greenwood, Acting Deputy Director, SEA-Extension, stated that the report is in the process of Department clearance and is to be released February 20, 1980.
- Maynard Heckel spoke of the difficulties of evaluating social and economic consequences of programs in Extension, means of establishing priorities in Extension and the relationships of Federal and State programs. Federal funds accounted for 41 percent of the total support for Extension, States put in another 39 percent and counties, 20 percent.
- Fred Woods stated that 31 States have specifically targeted small farms in their programs. He also emphasized the fact that Extension is not one organization, but 3,000 organizations in the United States with a Federal partner in the U.S. Department of Agriculture and Extension Services located within the Land-Grant universities, the District of Columbia and Puerto Rico, the Virgin Islands and Guam.
- In response to the question of the need for a sequel to this study, Cochairman Bertrand stated that there is a need for continuing evaluation in Extension and that an individual is being recruited to perform this task.
- This report was received by the Joint Council as information. For more information on this report, see Appendix I.

7. Report on the 1979 Joint Council Coordination Activities

a. Small Farms Committee

- Allan Johnson, Chairman of the Ad Hoc Committee on Small Farms Coordination Activities, reported that a letter has gone from the Joint Council to the Secretary informing him of the findings of the Ad Hoc Committee on Small Farms.
- He passed out copies of the small farms report and stated that distribution of the report was being made based on the distribution list formulated by the Committee and approved by the Joint Council's Executive Committee.
- The Ad Hoc Committee on Small Farms was dismissed with thanks for a job well done.

b. Human Nutrition Committee

- James Iacono, Chairman of the Ad Hoc Committee on Human Nutrition, reported that a draft letter had been written to the Secretary to call his attention to recommendations made in the study. He also reported that the study is being cleared by the Department for publication, after which it will be distributed according to a list formulated by the Committee and approved by the Executive Committee of the Joint Council.
- Cochairman Robins stated that this committee will not be discharged at this time because there needs to be some follow-up on coordination activities between the USDA and HEW, and between the different agencies of the Department, and between the Department and the States.

c. Integrated Pest Management

- Chairman John Mahlstedt reported that each of the four regions has organized regional IPM committees to focus on research, extension and education priority setting program development and coordination, and that Extension has had two years of experience of working with IPM in the States. He also announced that a National IPM Livestock workshop was held on March 5-7, 1979, at Kansas State University. The workshop was jointly sponsored by the United States Department of Agriculture and the United States Environmental Protection Agency.
- Cochairman Robins stated that the committee will not be discharged at this time because there is a need for additional coordination of IPM programs.

8. Proposed Revisions of Title V of the Rural Development Act

John Bottum, SEA-Extension, passed out a document and an update on the proposed revisions of this Act. Among the revisions were:

- a. Modify allocations so that all States receive at least \$100,000 or as near as appropriations permit with no State receiving less than it received in FY 1979.
 - b. Authorize under Title V, a Special Grants Program for public and private colleges and universities to address national and regional rural development policies.
- All colleges and universities are eligible to participate.

- Funds will be allocated on a formula basis.
- The revision recommends that plans of work and budget be planned for five-year intervals.

c. The report was received for information.

9. Discussions of Activities of nonLand-Grant Universities

- a. Dr. Lawrence Bogorad reported that there are 48 Association of American Universities (AAU) institutions half of which are public and half private nonLand-Grant institutions.
 - Disciplines taught in these institutions that are closely related to agriculture are: economics, organic chemistry (growth hormones, etc.), biology, (nitrogen fixation, photosynthesis) and others.
- b. Drs. Harold Robinson and Charles Smallwood reported on the American Asociation of State Colleges and Universities (AASCU) and the American Association of University Agricultural Administrators (AAUAA).
 - The American Association of State Colleges and Universities comprises some 332 institutions of higher education which span the United States, the territories of Guam and the Virgin Islands. These institutions educate one out of four of all U.S. college students.
 - These State colleges and universities range in size from 600 to 35,000 students and represent an extremely multi-cultural, multi-ethnic student and faculty population.
 - In addition to the traditional liberal arts and fields of teacher education which comprised the primary role of many of the AASCU institutions in the past, many of these institutions offer programs in fields such as engineering and technology, the sciences, and in agriculture.
 - In 1974 the administrators of the AASCU agricultural and forestry programs organized the American Association of University Agricultural Administrators (AAUAA). This association works closely with the AASCU committee on Agriculture, Renewable Resources and Rural Development, and the Washington Staff.
- c. Facilities of these institutions are not, but should be included in the Joint Council Facilities Study Group report. For a more complete text of this report, see Appendix II.
- d. The report was received for information.

10. Areas for Special Joint Council Coordination in 1980

- The Council decided to select one or two areas from four that were considered prime areas for coordination at the October 1979 meeting. The four areas from which to choose were:
 - a. Energy and Agriculture
 - b. Food and Agricultural Policy
 - c. Renewable Resources Programs and Concerns
 - d. Food and Agricultural Regulatory Programs
- Cochairman Robins emphasized the importance of selecting an area that the Council could foster coordination in 1980.
- After considerable discussion, the Council reached a consensus that one topic should be designated as an area for coordination in 1980.
- R. J. Hildreth made a motion that the Joint Council establish a task force on Energy and Agriculture, and that the Executive Committee be directed to further consider the other areas for possible Council action. The motion was seconded and passed unanimously.

11. Report from Committee to Develop a Five-Year National Plan for Renewable Resources Extension

- Chairman Merrill L. Petoskey reported that the National Workshop on Renewable Resources Extension is meeting on January 24-25, 1980, in Arlington, Virginia. Members of the Joint Council were invited.
- The final draft for the Renewable Resource Extension Act is being completed on January 17, 1980.
- Cochairman Robins commended Mr. Petoskey for bringing together this national program.
- The report was received as information.

12. Liaison Report from National Agricultural Research and Extension Users Advisory Board

- The Users Advisory Board, in its October 1979 report, listed nine topic areas, and a response from the Council to this report is requested.
- Cochairman Henry Anthony reported that the subject of transportation is a concern of the Users Advisory Board.
- The area of postharvest technology must be given attention by USDA.
- The next meeting of the Users Advisory Board will be February 18-20 in Orlando, Florida.

13. Status of Implementation of Joint Council Structure for Planning and Coordination

- Chairman W. I. Thomas reported that the four regions are organized with Ad Hoc Chairmen in each.
- Some questions raised by the regional councils are how are they to be organized, the establishment of functional committees in Extension and teaching, and how are they to be funded.
- A meeting on Friday afternoon, January 18, with the four Ad Hoc Regional Council Chairmen was designed to answer these and other questions.

14. Report from the Forest Service

- Dr. R. Max Peterson in this report stated that the Joint Council as created was a creature way overdue.
- The Forest Service deals with long-range use of land. The Forest Service must use land smarter and to do this, it must rely on research.
- There is a surplus of hardwood growth and a shortage of softwood.
- Research is needed to do the same jobs with less forest materials, to more efficiently use recreation areas, manage wildlife, endangered species and vegetation.
- Harvesting methods and transportation of wood for energy are also areas that need immediate attention.
- Agriculture has the know-how to manage energy plantations. There are forest belts, and the several types and species of trees must be matched with these belts.
- Conservation must be practiced -- using all parts of the trees that are cut, etc.
- There are pretty clear guidelines set up for clear cutting to protect the resources.

15. Report from the 1982 SEA Budget

- Dr. Ralph J. McCracken reported that the interim decision units (DUs) have been formulated. He circulated a list of candidate topics and individuals responsible for special analysis in FY 1982.
- Some specific areas have surfaced in the 1982 budget that were not as visible in the 1981 budget process, such as:
 - a. Economics, Market Education and Farm Management
 - b. Youth Development
 - c. Natural Resources

d. Land and Water Resources for Agricultural Production

- Resource people from States will be working with the decision units.
- The 1981 budget will be unveiled on January 28, 1980.

16. Report from ESCS

- Dr. Kenneth Farrell reported that copies of the publication, "Needs for Agricultural Research," will be made available to the Joint Council members in the near future.
- ESCS has met with a number of organizations to get views on agricultural research needs over the long run, and the priorities as they see them.
- The 1982 budget process in ESCS is similar to that used in the last two years. There will be three conferences in the field and one in Washington to obtain viewpoints from data and economic information users. As in the past, a series of meetings with assistant secretaries and agency administrators to obtain suggestions on ESCS programs will be scheduled in the early spring of 1980.
- The Users Advisory Board, in its upcoming meeting, will be asked to consider areas of agricultural economics needs. Hopes are that one or two areas of research needs can be agreed upon for review.

17. Five-Year Plan for Food and Agricultural Sciences

- Dr. Ralph J. McCracken reported that this report is not a detailed work plan; rather, it sets forth issues and concerns of the Department. It is more of an agenda of areas of emphasis.
- Futurist groups have predicted that production must be at full force to keep up with population.
- The report gives highlights of items of concern in response to Section 1410 of Title XIV.
- Cochairman Robins stated that Joint Council members and Regional Council Chairmen have a copy in hand and they should get responses back to the Executive Director or Executive Secretary by the end of next week, January 25, 1980.

18. Higher Education Manpower Assessment Project

- A status report on this project was made by Jane Coulter. She stated that the project should be ready for distribution within the next six weeks with visual aids.
- The Council received the report as information.

19. Joint Council Response to UAB Report

- Dr. John Gerwig and Dr. Kenneth Farrell suggested that the staff be instructed to draft a response and present to the Executive Committee at its February meeting.
- Dr. Mark Hegsted suggested that the Council make a "positive" report, and that the Council ask the staff to flesh out the final report prior to the February Executive Committee meeting.
- It was suggested that there be a bit of crosscutting with the Department's five-year reports.
- Dr. Nielson called attention to the fact that the Department, ECOP, ESCOP, the nonLand-Grant universities and CAHA had been asked to respond to the report and that the staff should have the advantage of their responses before responding for the Joint Council.
- Cochairman Robins directed the Joint Council to respond in writing to the summary and send the responses to the Executive Director or the Executive Secretary by no later than the end of next week (January 25, 1980).

20. Report from the Executive Committee

- Cochairman Robins reported that John Gerwig was elected as the new non-Federal member of the Executive Committee of the Joint Council. He replaces John P. Mahlstedt whose official term expired with the January 16-18, 1980, meeting.
- The Crop Losses Committee reported to the Executive Committee on Phase I of that study, and has been charged to work on Phase II which will include aspects of postharvest technology.
- The Executive Committee received a progress report from the Technical Information Systems Planning and Coordination Committee (TIS) given by Cochairman Richard Farley. He reported that another revision of the report is now in progress and will be ready in March.
- George W. Sledge is heading up a Program Structure Study Group to explore the question of a common program structure for the food and agricultural sciences. There are nine others working with him.
- The Technology Assessment Steering Committee has been recharged under Cochairmen Virgil W. Hays and John E. Lee.
- The Agricultural Research Awards Guidelines have been revised. Comments from the Executive Committee have been invited. The staff has been directed to finalize this work.

21. Special Committee on Planning and Coordination

- Dr. R. J. Hildreth reported on the staff work that was done prior to a meeting on December 7, 1979, and the results of the December meeting in Minneapolis, Minnesota.
- The four Ad Hoc Regional Council Chairmen were invited to take a special part in this discussion since the "bottoms up" approach to planning and coordination was emphasized.
- Areas discussed were:
 - a. Joint Council Planning and Coordination: Role, Objectives and Definitions
 - b. How Research Planning and Coordination are Currently Being Accomplished
 - c. How Planning and Coordination Are Currently Being Accomplished in Cooperative Extension
 - d. How Planning and Coordination Are Currently Accomplished in Higher Education
 - e. How Planning and Coordination are Currently Being Accomplished -- Across Functions
 - f. The Role of the Four-Year State Supported Universities Which Offer Baccalaureate Degrees in Agricultural Sciences
 - g. Internal Linkages and Operations - Planning and Coordination Structure of the Joint Council
 - h. External Linkages of the Joint Council
 - i. Resources of the Joint Council Planning and Coordination Activities
- Dr. Homer Folks indicated that the part of the report dealing with planning and coordination in higher education is inadequate. Cochairman Robins appointed Dr. Folks to revise that section of the report and bring it up to date.
- It was stated that a considerable amount of coordination is taking place already, outside of this formal structure.
- Dr. Robert Buckman made a motion that we accept the report in principle, and at a later date, no more than a year from now, we invite the four regional chairmen to react to the report. The motion was seconded and passed.
- Dr. Kenneth Farrell moved that the Council, with staff help, proceed to work on a broader policy statement based on the report of this committee. The motion was seconded by Dr. John Mahlstedt. The motion carried.

22. Policy on Financing Travel for Participation in Joint Council Activities

- The Joint Council passed the following statement as a recommendation to the Department of Agriculture:

The Joint Council has recommended that the USDA adopt the following policy on travel by non-Federal persons. The USDA will cover travel and per diem expenses of:

- a. Members or alternates at meetings of the Council.
- b. Executive Committee members at meetings of the Executive Committee.
- c. Persons invited to serve on Joint Council subgroups, including regional councils and regional committees, and persons who are invited to speak at Joint Council meetings, symposia or forums who specify that no other source of funds is available, and that their ability to participate is contingent upon the USDA paying their travel costs. Such requests will be addressed to the Executive Secretary with final decision to be made by the Cochairmen of the Council.

23. The Executive Committee and the Steering Committee on Planning and Coordination met with the four Ad Hoc Regional Council Chairmen for a two-hour workshop following the adjournment of the Council meeting.

Appendix I

EXECUTIVE SUMMARY: Extension Evaluation

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EXECUTIVE SUMMARY: Extension Evaluation

This report describes the Cooperative Extension system and evaluates the consequences of its educational programs. The report was requested by Congress in the Food and Agriculture Act of 1977 (Section 1459, Title XIV). The Secretary of Agriculture was asked to provide "... an evaluation of the economic and social consequences of the programs of the Extension Service and the Cooperative Extension Services."

Background

The Cooperative Extension system is made up of a Federal office in the U. S. Department of Agriculture and the Extension Services located within the land-grant universities in 50 States, the District of Columbia, Puerto Rico, the Virgin Islands, and Guam.

Extension is the largest off-campus informal education system of its kind in the world. Its resources currently include \$629 million support from Federal, State, and county governments: nearly 17,000 professionals, 10,000 program aides, several hundred thousand volunteers, and an office in virtually every county in the country.

This evaluation was a joint effort of the Department of Agriculture and the State Extension Services. A policy group guided the project, a design team developed the blue print for it, and a core staff conducted the required studies and wrote the report. An independent citizens' panel reviewed the project report. Their comments are included in Appendix I.

Economic and Social Consequences Highlighted

Agriculture and Natural Resources

By increasing the rate of adoption of new technology and knowledge generated by research, agricultural Extension programs have contributed significantly to the growth in productivity and efficiency of U. S. agriculture. This in turn has contributed to overall economic development, capacity of U. S. agriculture to increase exports, and moderation of the increase in prices of food and fiber to consumers.

Despite the depressing effect of increased production on farm prices, Extension assistance has increased average net income per farm.

True, these same developments also have led to fewer and larger farms. But by making technology and new knowledge available to more producers, Extension seems to have helped a large number of producers remain in farming.

An estimated two-thirds of U. S. agricultural producers had direct contact with Extension programs in 1978.

Medium and large farm operators have more contact with Extension programs than small farm operators. Only in recent years has a conscious effort been made to implement programs specifically for small, limited resource farmers.

Home Economics and Nutrition

A recent Gallup poll showed that 17 million, or about 10 percent of today's adult population, has participated actively, at least once, in some aspect of Extension home economics and nutrition programs.

People in rural communities participate more than those in urban communities. Adults with moderate to high incomes and professional status participated more than low-income and manual workers. Whites participated at almost double the rate of nonwhites.

Fifty-one percent of the respondents, including the 10 percent who actively participated in a program, reported receiving Extension materials. This 51 percent represents 85 million adults. The principal sources were newspapers, television, radio, publications, and newsletters. Among respondents receiving Extension information, 30 percent said food preservation and food preparation were the subjects covered most frequently. About 40 percent of the respondents said the information received was "very useful" or "fairly useful." But half of the respondents could not recall the subject matter.

Estimates of benefits from home gardening and food preservation Extension programs range from \$150 to \$600 savings per program participant. For programs on home repair, clothing, refinishing of upholstery and sewing machine maintenance, estimates of benefits range from \$10 to \$50 per participant.

Some 1.7 million families have participated in Extension's Expanded Food and Nutrition Education Program (EFNEP) since it began in 1970. Almost three-fourths had family income less than \$5,000. Fifty-eight percent lived in cities; 60 percent represented minorities. Analysis of food servings shows that 21 percent of those remaining in the program for 24 months served adequate diets after 24 months, compared with 4 percent of all entrants at the time of entry.

4-H Youth Programs

The most visible consequence of 4-H is participation itself. More than 4 million youth participated in one or more 4-H activities during 1976. More than one-half million parents and adult volunteers helped conduct those activities. No comparable substitute for these programs would have been available for most of the youth and volunteers who live in rural areas.

Consequences such as knowledge gains and the development of new skills and capacities are well substantiated and highly reliable. Consequences such as changes in social attitudes and social behavior are not as well supported.

4-H is a primary cause of knowledge gains and improved skills and capacities in many cases, but is only instrumental in others. Evidence of the effect of 4-H on social attitudes and behavior is weak. Probably the most important impact of 4-H on social attitudes and behavior is the maintenance role it plays in rural communities.

Almost 90 percent of the families of 4-H members have income of more than \$10,000 and 40 percent have income of more than \$20,000. Participation is about equally divided between boys and girls. Eighty-six percent are 9-15 years old. Minority participation is relatively high (21 percent) but is not evenly distributed by geographic region or by program delivery system.

Private sources provide about a third of the financial support for 4-H. In addition, the value of lay volunteer services is estimated to be almost four times the amount of Federal, State, and county funds allocated for 4-H. 4-H is the only youth organization and program receiving annual Federal financial support.

Community and Rural Development

These programs presently serve about 10 percent of the more than 60 million people in rural areas. Program participants include private citizens, local government representatives, local service clubs and development organizations, State government, and Federal agencies.

A study of 52 local Extension community and rural development projects in 29 States showed that approximately one-third of the projects were designed specifically to serve geographically, socially, or economically disadvantaged citizens. Generally, Extension has taken more of an initiating role than most other local groups in addressing the needs of disadvantaged citizens through Extension programs.

Because Extension's typical role is that of educator, of catalyst, of convener, and of coordinator, it is not easy to measure the approximate share of credit attributable to Extension efforts. But program clients give high ratings to Extension's assistance in improving community problem-solving capacity, community facilities and services, local public policies, and rural income opportunities.

Interpretations Related to Consequences

To guide this evaluation, the policy committee identified many policy-related questions. These questions concerned Extension's support, clients, program objectives, relationship to other organizations, and education methodology.

Policy Direction, Funding, Program Objectives, and Clientele

Because Extension is subject to many sources of policy influence and funding, management of the system is more accurately described as "coordination." Each State Extension Service offers programs in the four broad areas of agriculture and natural resources, home economics and nutrition, 4-H youth development, and community and rural development. However, program objectives and clientele vary from State to State and from county to county.

Federal funds for Extension work, \$258 million in 1978, account for 41 percent of the total support for Extension. States put in another 39 percent and counties, 20 percent. More than half of the Federal funds are allocated to States using a formula specified in the Smith-Lever Act and based on farm and rural populations.

A small Federal staff administers Extension legislation, provides administrative and technical program assistance to the States, and serves as a link between the States, USDA agencies, and other parts of the Federal government. They are catalyst and clearinghouse, accelerating the adoption of successful State and county programs.

Under existing legislative authorities and memoranda of agreement between the USDA and the State Extension Services, the definition of specific program objectives and clientele target groups is left mainly to the States and counties. The States must submit annual plans of work for the Department's approval. And the Department must concur in the selection of new State Extension Directors. But these tools, although available, are seldom used to influence program and clientele priorities.

The Federal role is strongest when policy direction is written into the law or Federal funding is earmarked for a specific purpose. Extension's Expanded Food and Nutrition Education Program, integrated pest management, and urban gardening programs are prime examples.

The greatest influence on the choice of Extension programs and clientele is generally found at the county level--and not by accident. Extension takes pride in its grassroots orientation. County agents are close to the needs of people. Local advisory groups have substantial influence.

The system does respond effectively and often rapidly to certain national problems which also are felt at State and local levels. Energy is a case in point. Another is Extension's response to natural disasters, such as floods and drought.

The response is weakest when the need is confined to a clientele group unable to communicate its need at the local or State level (disadvantaged groups primarily), and when the incentive of individuals to seek educational assistance is lacking, as in the case of pressures for improved environmental quality.

Earmarking of Federal funds ensures attention to national problems. But it tends to minimize grassroots participation in the development of locally accepted objectives or support. At times, however, earmarking helps State and local managers make program shifts they consider important, but as a rule they prefer the stability and flexibility of unearmarked formula funding.

Extension's clientele and diversity of their needs have increased dramatically in recent years. Extension has handled this expansion in part by wholesaling more educational materials through mass media and by hiring paraprofessionals. Some people are concerned about these changes. They think wholesaling will not lead to the kinds of behavioral changes that follow more intensive educational assistance. Many traditional agricultural clients fear that the broadening of Extension's clientele will dilute services to them. Extension has been reluctant to reduce traditional services, fearing a loss of support from traditional clientele.

Extension's Relationships with and Response to Other Organizations

Extension appears to complement or supplement, rather than compete with, the abundant information and the education now provided by the private sector and other public agencies. Extension often serves as a primary source of verification of information from other sources. It also performs a referral function. Farm magazines and other mass media draw heavily on Extension staff and materials for their information base. Extension also has helped the private sector organize service activities such as producer cooperatives and farm recordkeeping associations.

Extension's working relationships with action and regulatory agencies are broader and more diverse than most people realize. They range from client referral to full collaboration in program development and delivery. Examples of the latter are farm safety, pesticide applicator training, and certain nutrition programs.

Action and regulatory agencies seek Extension assistance, in part, because they know that clients generally do not identify Extension with the Federal or State government. Extension, on the other hand, carefully enters into relationships with others to protect its credibility and image as an educator.

Extension's direct ties to research are cited as a major strength of the system. The main link between Extension and research occurs at the State campus. Many State Extension staff members have advanced degrees and joint appointments in research and/or resident teaching and Extension.

This link is much stronger in agriculture than in any other subject matter. Agricultural Extension staff members translate and deliver research knowledge to farmers and feed information and technology needs of farmers back to researchers. Studies show that a sizable portion of the estimated 30 to 60 percent rate of return on public investment in agricultural research is because of Extension.

Extension Methodology

Teaching by demonstration and person-to-person or one-to-one approaches still are major techniques of Extension education. But group meetings, mass media use, and audiovisual technology have expanded substantially. Recorded telephone messages, open circuit TV, video tape, and computers now supplement people and printed material.

The more personal channels of communication have the greatest impact on clientele. But only small numbers can be reached by that method. Cost is a big factor. A recent study in North Dakota showed a cost per contact of between \$7 and \$16 for meetings but only 3 cents per contact for TV.

Extension has tried to fit the methodology to the educational need. A farmer considering a major change in his operation may require several one-to-one sessions. Less motivated clients, like many families in the EFNEP program, require even more time and attention. But farmers or urban gardeners who need only a reminder that it is time to carry out a certain cultural practice can be reached easily by mass media.

4-H works through volunteer leaders. This requires extensive time to recruit lay leaders and much personal and group contact to train them. This is the same for many of the home economics and community development programs. The "snowball effect," however, pays countless dividends for such investment of time.

Implications and Future Issues

Program and Clientele Determination

Because the Extension system is decentralized and its objectives general, it is not easy to agree to the most appropriate clientele mix. A longstanding, if implied, objective of Extension has been to improve the efficiency of agriculture. Another objective gaining in importance is simply helping individuals who need help the most. If the former is emphasized, Extension would work primarily with commercial farmers who contribute the most to agricultural production. If the latter is emphasized, small limited resource farmers and disadvantaged people would receive greater attention.

The Federal-State-county partnership is delicate and political. Tension is as much a characteristic of Extension as it is of the American system of government.

The Federal Extension unit, once viewed as the "education arm" of the USDA, now is seen mainly as the link between the Department and other Federal agencies and the State Extension Services, and a catalyst for the adoption of successful State programs by other States. The Federal staff has a dual role. They help the States, but they also represent the USDA.

Future Delivery of Extension Education

The county agent is cited as a fundamental strength of the Extension system. But the agent's role is changing.

Certain problems now addressed by Extension require more specialization. As noted earlier, many commercial farmers want contact with the county agent but often go directly to the campus specialist for help. County agents continue to perform an important referral function.

If county agents become more specialized, they could deal directly with more local problems. But they would tend to lose the breadth of exposure and the understanding of a generalist.

The budget factor will become more critical. Extension now is finding ways to reach more people with fewer dollars. It is using more multicounty or area agents. But clientele acceptance of this approach is slow.

Because of the combination of increasing, diversified demands and tight budgets, the alternative of multi-State Extension programming will receive increasing consideration.

Closing Comment

This evaluation has its own consequences. Throughout the Extension system, there is a growing understanding of Extension's strong points, its limitations, and the issues it now must face. "Evaluation" is no longer synonymous with "investigation." Already in motion are plans to build an ongoing Extension evaluation capability that will overcome certain limitations encountered by this evaluation.

These limitations deal primarily with (1) the difficulty in precisely measuring change as a consequence of education and (2) the lack of sufficient data and a refined conceptual framework to adequately measure social and economic consequences of Extension programs. The lack of sufficient data is due largely to the breadth and the variety of Extension programs. This breadth and variety is sometimes reflected in general stated objectives and diverse interpretations of these objectives by various participants in the Extension system. The ongoing evaluation and the reporting capabilities will not be limited to the question, "How many people were reached?", but when possible, will respond to the question, "So what?" These efforts will guide the development of a new and relevant information reporting system for Extension as well as continue to raise the sensitivity of staff members at all levels concerning the importance of adequately measuring results.

Appendix II

The American Association of State Colleges and Universities (AASCU)
and
The American Association of University Agricultural Administrators (AAUAA):

Their Role and Scope

Presented to the
Joint Council on Food and Agricultural Sciences
January 17, 1980
Washington, D.C.

by

Dr. H. F. Robinson
Chancellor, Western Carolina State University
Joint Council Member

and

Dr. Charles M. Smallwood
Dean, School of Agriculture and Home Economics
California State University, Fresno
Joint Council Member

I. General Statement

The American Association of State Colleges and Universities (AASCU) comprises some 332 institutions of higher education which span the United States and reach to the territories of Guam and the Virgin Islands. With a total enrollment of approximately two and one-half million students, they educate one out of four of all U.S. college students. They have a commitment to quality education for the future and to globalizing the perspectives of their students and faculty through cooperation in international development activities and through the international exchange of students and faculty.

State colleges and universities exemplify the rich diversity available in public higher education. They range in size from 600 to 35,000 students and represent an extremely rich multi-cultural, multi-ethnic student and faculty population. Their course offerings and programs extend from liberal arts to computer technology and express a commitment to public service, regionally and internationally. In addition to four-year programs leading to bachelor's degrees, many AASCU institutions have master's programs, and an increasing number have doctoral programs. Many offer programs of less than four years in technical-vocational fields leading to certification and associate degrees.

In addition to the traditional liberal arts and fields of teacher education which comprised the primary role of many of the AASCU institutions in the past, many of our institutions offer programs in fields such as engineering and technology, the sciences, and in agriculture.

II. Characteristics of Institutions

A. Location of Institutions

<u>Region</u>	<u>Percent of AASCU Institutions</u>
South	30
East	25
Mid-west	23
West	22

B. Size of Institutions and Enrollment Characteristics

<u>Enrollment</u>	<u>Mean</u>
	7,077
% Full-Time	70
% Part-Time	30
% Undergraduate	89
% Graduate	11

<u>Institutional Size:</u>	<u>% of Total</u>
0- 3,000	27.7
3,000- 6,000	26.5
6,000- 9,000	16.9
9,000-12,000	12.0
12,000-15,000	7.1
15,000-18,000	3.7
21,000-24,000	2.2
24,000-37,000	2.1

Total Institutional Enrollment	2,300,000
Largest AASCU Member	36,895
Smallest AASCU Member	488

C. Type of Degree Offerings

(For 314 institutions contained in a recent survey by Carnegie.)

<u>Degrees</u>	<u>AASCU Members</u>	<u>Percent</u>
Doctoral degree granting institutions (awarding 40 or more PhDs in at least 5 fields)	21	6.7
Comprehensive Universities and Colleges (institutions offering a liberal arts program and one or more professional programs)	275	87.6
Primarily Liberal Arts Institutions	7	2.2
Specialized Institutions (Engineering, teacher education, arts, maritime, other)	11	3.5

D. Degrees Granted in 1975-76 in Higher Education

	<u>Bachelors</u>	<u>Masters</u>	<u>Doctoral</u>
Total AASCU	288,092	89,373	1,595
Total U.S.	934,443	313,001	34,076
AASCU%	30.8	28.6	4.7

E. Percentage of Types of Baccalaureate and Masters Degrees at AASCU Institutions as a Fraction of all Degrees in 1975-76

<u>Bachelors</u>	
<u>Field of Study</u>	<u>Percent</u>
Education	48
Home Economics	36
Mathematics	30
Biological Sciences	23
Engineering	19
Agriculture	17
Military Science	13

<u>Masters</u>	
Education	42
Biological Sciences	26
Home Economics	25
Engineering	9
Agriculture	8
Computer Science	5

F. Method of Financing of the AASCU Institutions (1975)

	<u>Average</u>
State and local appropriations as a percent of current fund revenue	53.9
Tuition revenue as a percent of current fund revenue	16.4
Other revenue as a percent of current fund revenue	29.7 (100%)

III. AAUAA and Home Economics Institutions and Programs

In 1974 the administrators of the AASCU agricultural and forestry programs organized the American Association of University Agricultural Administrators (AAUAA) and now work closely with the AASCU Committee on Agriculture, Renewable Resources and Rural Development and the Washington staff. An Agriculture-Natural Resource staff person is being added to the AASCU staff to work with the ARRRD Committee and AAUAA.

Some of the oldest agricultural programs in the country were established to serve regional needs, especially in teacher training programs. Today they serve a variety of clientele and offer a wide array of programs.

Graphic A. There are fifty-eight agricultural and forestry schools in AASCU located throughout the United States.

Graphic B. Forty percent are organized on the School, College, or Division Level with from two to seventeen departments and/or programs. Sixty percent are organized as an agricultural department with specialized faculty, i.e. Animal Science, Soil, Plant Science, Agricultural Economics, etc. The primary majors offered in these programs are Agricultural Education, Agricultural Business/Economics (fastest growing areas), Animal Science, Plant Science, Horticulture, and Mechanized AgricultureAgricultural Engineering.

Graphic C. The total faculty in these AASCU-AAUAA institutions number approximately 7,000 in Agriculture and Natural Resources. Of those faculty, 675 have doctorates. In averaging out the assignments of all faculty we find 85% allocated to teaching, 10% to research (50% of the institutions conduct research which would average 20% faculty allocation for those conducting research), and 5% to service (joint appointments in Extension, faculty committees, etc.), and it is estimated that 60-75% of these faculty are on 9-month appointments.

Graphic D. The undergraduate enrollment in the 58 institutions totals 30,000 students (25% of all U.S. agriculture students). Institutions with the largest enrollment are California Polytechnic State University, San Luis Obispo, 3600; California State Polytechnic University-Pomona, 2100; California State Polytechnic University-Humboldt (Natural Resource), 2100; University of Wisconsin-Stevens Point, 1980; University of Wisconsin-River Falls, 1713; Texas Tech University, 1500; Southern Illinois University, 1149; California State University-Fresno, 900; Stephen F. Austin State University (Texas), 792; Southwest Louisiana University, 649; and University of Wisconsin-Platteville, 602. The majority of institutions have 300-600 students enrolled in agriculture. Southern Arkansas University-Magnolia has the smallest number enrolled (91).

Graphic E. Seventy-five percent of the institutions have graduate programs (MS and two PhD programs). The graduate enrollment for all institutions totals 1,550 with the largest enrollments at California State University-Fresno, 190; Texas Tech University, 177; California State University-Humboldt, 114; Southern Illinois University, 106; and California Polytechnic State University-San Luis Obispo, 90.

Graphic F. Degrees granted annually in Agriculture and/or Natural Resources number approximately 5,000 BS, 500 MS, and 7 PhD. It is estimated that of the AASCU-AAUAA agriculture/natural resources graduates: 50% enter agricultural industry in supply, finance, marketing, processing; 20% return to production agriculture as owners or managers; 15% teaching; 10% graduate study; and 5% State-Federal employment. In contrast, Land-Grant graduates have larger numbers enter State-Federal employment (30%) and attend graduate school (30%), and less in production agriculture and agribusiness and processing.

Graphic G. Many institutions have specialized facilities and projects which have been funded by the state, region, or by private entities. Examples of special facilities or projects at AAUAA institutions:

<u>Institution</u>	<u>Facility/Project</u>
Murray State University	Mid American Remote Sensing Center with NSAS (See Exhibit A)
	Biological Research Station, Kentucky Lake

<u>Institution</u>	<u>Facility/Project</u>
Texas A & I University	Citrus Research Center
University of Wisconsin Platteville	Beef Testing Station
University of Wisconsin River Falls	Center for Vocational Education in Agriculture
Illinois State University	Solar Energy Research (ISU-ERDA-NASA-GE)
West Texas State University	Kilgore Research Center Beef Research Station Wind Energy Involvement (State-Federal)
California State Polytechnic University Pomona	Small Ruminants-Semen Research Center Equine Research Center
Western Carolina University	Center for Improving Mountain Living
California Polytechnic State University San Luis Obispo	Beef Evaluation Center Solar Energy Industrial Dehydration Unit (Department of Energy)
California State University-Fresno	Enology Unit Viticulture Research Center Irrigation Technology Center
Southwest Louisiana University	Ira Nelson Horticulture Center Greenhouse Vegetable Research Center Crawfish Research Center Cooperative Weed Research Center
Texas Tech University	PanTec Research Center Textile Research Center International Center for Arid/Semi-Arid Lands (ICASAL)
University of Arkansas Monticello	Beef Performance Station Research and Extension Center (cooperation w/University of Arkansas)

Question: How can the Joint Council fulfill the obligations of the facilities study required in Section 1462 of the Farm Bill which states "based on fullest utilization of human, monetary, and physical resources," and ignore the special facilities and human resources available at AASCU-AAUAA institutions?

Graphic H. Many of the AASCU-AAUAA institutions are involved in international activities. In cooperation with USDA-IT they provide short term activities, international training courses, and regular academic contracting. Foreign involvement includes institution-to-country

contracting, AID contracts. There are twelve eligible BIFAD institutions and six have received BIFAD strengthening grants: California State University, Fresno; California State Polytechnic University, Pomona; Texas Tech University; University of Wisconsin-River Falls; Sam Houston State University; and Southern Illinois University.

Graphic I. Approximately 50% of the AASCU-AAUAA institutions conduct research. Of those institutions, 25% received Federal research funds (approximately \$1,700,000), 30% received State research funds (approximately \$2,000,000), and 50% received other funds (approximately \$1,000,000). Question: Are there Land-Grant and/or USDA projects that could efficiently utilize faculty and facilities of appropriate AASCU-AAUAA institutions? There are a few instances of cooperative endeavors...they are the exception rather than the rule. There is gross inefficiency by Land-Grant institutions in most states because of a lack of administrative philosophy that would effectively utilize the AASCU-AAUAA institutions in state and federal projects.

A model for the involvement of non-land grant agricultural faculty in public service and research has been developed in Wisconsin. The state legislature recognized the potential seven years ago and provided a modest appropriation for research between the land grant campus located at Madison, and the two non-land grant campuses located at Platteville and River Falls. To date, over 50 cooperative research projects have been funded. In addition, joint appointments with University of Wisconsin Extension have been made at the two non-land grant campuses. Currently the faculties and resources of the three campuses are being used to conduct research and to promote the cause of agriculture through public service endeavors in Wisconsin. The cooperative aspect has expanded to graduate and undergraduate education as well as into other related areas. The faculty members on the three campuses, through a common bond, have a strong working relationship and are presently working toward solutions to many of the problems which are facing agriculture today. The potential for the implementation of the "Wisconsin Model" in a number of states could effectively expand the human and physical resources available for participation in research and public service activities. Maximum benefits could be obtained from a minimal investment.

California State University-Fresno and the USDA have several avenues of cooperation. The university provided land for a forestry research laboratory and cooperates in research and utilization of the 4200-acre San Joaquin Experimental Range. CSU-Fresno has (for 30 years) provided 40 acres and water for the USDA-SEA horticultural research unit in Fresno. CSU-Fresno irrigation faculty and graduate students are also involved extensively in cooperative research.

Graphic J. There are 122 AASCU institutions offering Home Economics programs located throughout the United States (see Exhibit B). Fifty-six institutions granted 729 BS, 77 MS, and 4 doctoral degrees (1979) in Food, Nutrition, Dietetics; fourteen institutions granted 171 degrees in Interior Design; thirty-five institutions granted 671 degrees in Child Development and Family Relations; thirty institutions granted 568 degrees in Clothing and Textiles; and fourteen institutions granted 171 degrees in Consumer Science and Management. Question: How can the Joint Council fulfill Subtitle D of the 1977 Farm Bill (Section 1422) to "develop and implement a national food and human nutrition research and extension program..." and (Section 1425) a "nutrition education program" without considering the fifty-six institutions involved in Food, Nutrition, and Dietetics programs involving research and education through the doctorate?

Graphic K. There are opportunities for contribution by AASCU-AAUAA institutions. They will continue providing 25% of the nation's agricultural and natural resource graduates. In research, 60-100 man years are presently being contributed; 670 doctorates on faculties offer opportunities for joint appointments with Land-Grant institutions and/or USDA-SEA projects where appropriate. Most faculty have 9-month appointments and this offers opportunities for appropriate utilization in competitive grants, cooperative USDA-SEA and Land-Grant projects with joint appointments during the academic year and/or full utilization during the summer. There is potential for more involvement in providing international agriculture institutional and in-country contracts and training programs.

Graphic L. In summary, the AAUAA-AASCU institutions are a segment of agricultural education, research, and service that educates 25% of the students in public institutions of the nation; has some unique facilities and programs not generally recognized nationally; has been virtually ignored by USDA, Congress, and Land Grant institutions in any national (or state) assessment of agricultural education, research, and/or service as to: a) present contribution, b) current utilization, or c) in planning for the future; through recent activities has made the Joint Council, Congress, AID, and BIFAD more aware of its contribution and potential (whether appropriate consideration and utilization in the national interest will be given remains to be seen); and intends to make certain that appropriate bodies continue to be aware of its quality, contribution, and potential for appropriate considerations that are in the national interest and given state interest.

Exhibits C and D show undergraduate and graduate enrollments and degrees granted by AAUAA-AASCU institutions. Inadvertently, the following institutions were omitted: Indiana State University, Idaho State University, Michigan Technological University, Northern Arizona University, and Missouri Western State College.